

WHAT IS CLAIMED IS:

1. A circuit comprising:
 - a plurality of capacitors coupled in parallel;
 - a plurality of capacitor switches, each one of the capacitor switches coupled in
5 series with a respective one of the plurality of capacitors;
 - a plurality of control circuits, each of the plurality of control circuits coupled to a
respective one of the plurality of capacitor switches, to generate a respective control
voltage, and to independently set a respective one of the plurality of capacitor switches to
the respective control voltage; and
 - 10 a plurality of control switches, each of the plurality of control switches to couple
and to decouple a respective one of the plurality of control circuits to and from a control
signal.
2. A circuit according to Claim 1, further comprising a plurality of sets of one or
15 more control biasing circuits, each of the plurality of sets of one or more control biasing
circuits to set a respective control voltage to one of a reset voltage, a first threshold
voltage, and a second threshold voltage.
3. A circuit according to Claim 1, further comprising an oscillating circuit.
20 coupled to the plurality of capacitors by the plurality of capacitor switches, an output
frequency of the oscillating circuit based at least on a capacitance provided to the
oscillating circuit by the plurality of capacitors.
4. A circuit according to Claim 1, further comprising:

a charge pump, the charge pump to sink or source the control signal from or to the plurality of control circuits, each of the plurality of control circuits to generate the respective control voltage based at least in part on the control signal.

5 5. A circuit according to Claim 4, further comprising:

a detector, the detector to transmit a difference signal to the charge pump, the difference signal to indicate a difference between a reference signal and an output signal, wherein the output signal is based on one or more of the plurality of capacitors, and wherein the charge pump is to generate the control signal based on the difference signal.

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6. A circuit according to Claim 5, further comprising:

an oscillating circuit coupled to the plurality of capacitors by the plurality of capacitor switches, the oscillating circuit to output the output signal, wherein the output signal is based at least on a capacitance provided to the oscillating circuit by the plurality
15 of capacitors.

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7. A circuit according to Claim 1, wherein if a particular capacitor switch is set to the first threshold voltage, a particular capacitor coupled in series with the particular capacitor switch contributes negligibly to a total capacitance of the plurality of
20 capacitors,

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wherein if the particular capacitor switch is set to the second threshold voltage, the particular capacitor coupled in series with the particular capacitor switch contributes substantially its characteristic capacitance to the total capacitance of the plurality of capacitors, and

25 wherein the reset voltage is greater than the first threshold voltage and less than the second threshold voltage.

8. A method according to Claim 1, wherein at least two of the plurality of control circuits are not identical to each other.

9. A method according to Claim 8, wherein the at least two of the plurality of control circuits are to generate different control voltages in response to a same control signal.

10. A method according to Claim 1, further comprising:
a plurality of charge pumps, each of the plurality of charge pumps coupled to a respective one of the plurality of control switches, and to sink or source a respective control signal from or to a respective one of the plurality of control circuits,
wherein each of the plurality of control circuits to generate the respective control voltage based at least in part on the respective control signal.

11. A method according to Claim 10, further comprising a detector, the detector to transmit a difference signal to the plurality of charge pumps, the difference signal to indicate a difference between a reference signal and an output signal, wherein the output signal is based on one or more of the plurality of capacitors, and wherein at least two of the plurality of charge pumps are to generate different control signals based on the difference signal.

12. A method comprising:
setting a plurality of control circuits and a plurality of capacitor switches to a reset voltage;
coupling a first of the plurality of control circuits to a control signal, the first control circuit coupled in series to a first of the plurality of capacitor switches;

determining that a control voltage of the first control circuit is less than a first threshold voltage, the first threshold voltage being less than the reset voltage;

setting the first control circuit to the first threshold voltage; and

uncoupling the first control circuit from the control signal.

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13. A method according to Claim 12, wherein each of the capacitor switches is coupled in series to a respective one of a plurality of capacitors, and wherein an effective capacitance of a capacitor coupled to the first capacitor switch is substantially zero if the first control circuit is set to the first threshold voltage.

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14. A method according to Claim 13, wherein a resistance of the first capacitor switch is substantially infinite if the first control circuit is set to the first threshold voltage.

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15. A method according to Claim 12, further comprising:

coupling a second one of the plurality of control circuits to the control signal;

determining that a control voltage of the second control circuit is greater than a second threshold voltage, the second threshold voltage greater than the reset voltage;

setting the second control circuit to the second threshold voltage;

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uncoupling the second control circuit from the control signal; and

coupling a third one of the plurality of control circuits to the control signal.

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16. A method according to Claim 15, wherein a resistance of a second capacitor switch coupled to the second control circuit is substantially zero if the second control circuit is set to the second threshold voltage.

17. A system comprising:

a transceiver to transmit and receive data comprising:

a plurality of capacitors coupled in parallel;

a plurality of capacitor switches, each one of the capacitor switches
coupled in series with a respective one of the plurality of capacitors;

a plurality of control circuits, each of the plurality of control circuits
coupled to a respective one of the plurality of capacitor switches, to generate a
respective control voltage, and to independently set a respective one of the
plurality of capacitor switches to the respective control voltage; and

a plurality of control switches, each of the plurality of control switches to
couple and to decouple a respective one of the plurality of control circuits to and
from a control signal;

a processor to process the data; and

a double data rate memory in communication with the processor.

18. A system according to Claim 17, further comprising:

a framer coupled to the transceiver and to the processor, the framer to decapsulate
data received by the transceiver and to encapsulate data to be transmitted by the
transceiver.